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Land Mollusca of Saba Island, Lesser Antilles

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Saba Island (17°38' N; 63°14' W) is a small extinct volcano at the northern end of the Leeward Island group of the Lesser Antilles some sixteen miles (about 26 km.) NW of St. Eustatius. It has an area of 5 square miles (13 km.) and its coasts are mainly sheer cliffs. It is administered by the Dutch Territory of Curaçao.

Mt. Scenery (The Mountain) its highest point, has an altitude of 870 meters (2854 feet), is usually cloud covered and supports a small area of "mist forest". The vegetation is principally of tree ferns and a scattering of palms. On the windward side (eastern) the vegetation is more scrubby with some areas quite bare. The leeward side (western) vegetation is heavier and with some mahogany. The many ravines support a fairly heavy cover. Saba can be described generally as being a green island.*

Mr. George Seaman, Wildlife Biologist for the Pittman-Robertson Wildlife Restoration Project, U.S. Virgin Islands, made a collecting trip to Saba and other nearby islands during April of 1968. Conditions were exceedingly dry and considered by the local people the worst in over fifty years. I am indebted to him for sending me the land mollusks as well as certain data given above. Under *Records*, however, are included all of the species which could be located in the literature.

The land mollusks which now occur on Saba probably

* See James Cerruti, The Netherlands Antilles: Holland in the Caribbean. National Geographic, 137: no. 1, pp. 139-146, January 1970.

reached this small and relatively isolated island by mechanical means. A total of 14 species is presently known from Saba. Four of these have probably reached Saba in recent times by commerce; *Cryptelasmus canteroiana cienfuegosensis* Pilsbry from Cienfuegos, Las Villas, Cuba; *Leptinaria (Luntia) insignis* (E. A. Smith) from Trinidad; *Melaniella gracillima sanctithomensis* (Pilsbry) from St. Thomas, Virgin Islands; and *Zonitoides arboreus* (Say) from North America. This last species could well have been introduced on Saba from elsewhere in the West Indies. Eight of the remaining ten species are widely distributed in the West Indies and two are limited to the Northern Lesser Antilles, Puerto Rico and St. Croix.

No fresh water species are known to occur on Saba, though a careful investigation during periods of greater rainfall may produce a limited number as well as land species not now recorded.

Only St. Martin, about 26 miles (about 42 km.) NNE of Saba is sufficiently well known malacologically to make a fair comparison. It has 39 land species (Coomans, 1967) and an area of 38 square miles (98.47 sq. km.). This number does not include 7 subspecies, as these may be only slightly divergent populations rather than geographically separated entities.

List of the Species Known from Saba Island

HELICINIDAE

***Helicina fasciata* Lamarck**

Helicina fasciata Lamarck 1822, Histoire Animaux sans Vertèbres (1) 6: pt. 2, 103 (Porto Rico); not *H. fasciata* Spix 1841.

Helicina picta 'Férussac' Sowerby 1842, Thesaurus Conchyliorum 1: 6, pl. 2, fig. 56; pl. 3, figs. 140-141 (West Indies).

Helicina rotellaris Menke 1828, Synopsis Methodica Molluscorum, Permont, p. 80 (locality unknown).

Specimens examined. The Mountain at 2000 feet (G. Seaman); Saba (MCZ).

Remarks. This is a species of wide distribution in the Lesser Antilles.

Helicina picta Fér. (above) was never described by Férussac. It has been listed as a valid species or as a synonym of *H.*

fasciata Lam. by many authors. The earliest description which I have been able to locate is that of Sowerby above. Pfeiffer 1852, *Mono. Pneumonopomorum Viventium* **1**: 383, listed this name as a synonym of *H. fasciata* Lamarck: "*Helicina picta* Fér. Mus.". This would indicate the *H. picta* Fér. was only a name on a specimen or specimens in the collection of Férussac and was never published by him.

SUCCINEIDAE

Succinea riisei Pfeiffer

Succinea riisei Pfeiffer 1853, *Zeitschrift für Malakozoologie* **10**: 52 (Porto Rico); Pfeiffer 1853, *Mono. Heliceorum Viventium* **3**: 624 (Porto Rico); Bland 1881, *Ann. New York Acad. Sciences* **2**: 124; Van der Schalie 1948, *Misc. Publications, Mus. Zool., Univ. Michigan* **70**: 43, pl. 4, fig. 3.

Remarks. Bland (1881, p. 124) recorded this species from Saba as "a *Succinea*, which I believe to be *Riisei*". So far as I can determine, later records for this species from Saba are based upon this reference of Bland. This species has been recorded from St. Croix. See (Ramsden 1913, p. 31).

SUBULINIDAE

Beckianum H. B. Baker

Beckianum H. B. Baker 1961, *Nautilus* **75**: 84, type species, *Synopeas beckianum* (Pfeiffer); new name for *Synopeas* Jousseume 1889, non Foerster 1856.

Diaopeas Haas 1962, *Studies on the Fauna of Curaçao and other Caribbean Islands* **13**: 56, type species, *Synopeas beckianum* (Pfeiffer); new name for *Synopeas* Jousseume, non Forster [sic] 1856.

Beckianum beckianum (Pfeiffer)

Bulimus beckianus Pfeiffer 1846, *Symbolae Historiam Heliceorum* **3**: 82 (Insula Opara [Rapa Island, Oceanica]).

Opeas beckianum (Pfeiffer). Pilsbry 1906, *Manual of Conchology* (2) **18**: 189, pl. 27, figs. 42-46; 54-55.

Diaopeas beckianum (Pfeiffer). Haas 1962, *Studies on the Fauna of Curaçao and other Caribbean Islands*, **13**: 55, pl. 10, figs. A-D.

Records. Road to Bottom; Booby Hill (both F. Haas).

Specimens examined. Booby Hill at 1500 feet (G. Seaman).

Remarks. The type-locality, Island of Opara [=Rapa] is in error according to Pilsbry (above) as no specimens similar to *B. beckianum* are known from there or anywhere else in Polynesia.

This species is widely distributed in Central America, central and northern South America and on many islands in the West Indies.

***Cryptelasmus canteroiana cienfuegosensis* Pilsbry**

Cryptelasmus canteroiana cienfuegosensis Pilsbry 1907, Man. of Conch. (2) **18**: 332, pl. 48, figs. 3, 6, 8, 9 (Cienfuegos, Cuba); Haas 1962, Studies on the Fauna of Curaçao and other Caribbean Islands **13**: 55, pl. 11, fig. A (Saba: Great Hill near Paris; Curaçao: Bullen Baai, 1948).

Remarks. The two localities given above by Haas are the first ever recorded for this genus outside of Cuba. Both records are rather recent introductions by man and possibly distributed on plants or plant roots.

***Leptinaria (Luntia) insignis* (E. A. Smith)**

Luntia insignis E. A. Smith 1898, Jour. of Conch. **9**: 28, fig. 8 (Trinidad); Pilsbry 1906, Man. of Conch. (2) **18**: 218, pl. 40, fig. 7.

Leptinaria (Luntia) insignis (Smith). Haas 1962, Studies on the Fauna of Curaçao and other Caribbean Islands **13**: 53, pl. 11, figs. I-J.

Records. Road to Bottom (F. Haas).

Remarks. This species was described originally from Trinidad. It is well figured by Haas.

***Lamellaxis (Allopeas) micrus* (d'Orbigny)**

Helix micra d'Orbigny 1835, Magasin de Zoologie, p. 9 (easternmost foothills of the Andes, near Santa Cruz de la Sierra, Bolivia).

Opeas micra (d'Orbigny). Pilsbry 1906, Man. of Conch. (2) **18**: 193, pl. 27, figs. 49, 56-57.

Lamellaxis (Allopeas) micron (d'Orbigny). Haas 1962, Studies on the Fauna of Curaçao and other Caribbean Islands, **13**: 57, pl. 7, figs. A-E.

Records. Road to Bottom; Spring Bay; Booby Hill (all F. Haas).

Specimens examined. Booby Hill at 1500 feet (G. Seaman).

Remarks. A species of wide distribution throughout most of the American tropics. Most, if not all of the West Indian locality records, were probably introduced by commerce.

Opeas octogyrum plicatellum (Guppy)

Stenogyra plicatella Guppy 1868, Ann. Mag. Nat. Hist. (4) **1**: 438 (Trinidad).

Opeas octogyrum plicatellum (Guppy). Pilsbry 1906, Man. of Conch. (2) **18**: 207, pl. 29, fig. 75 (many localities); Haas 1962, Fauna of Curaçao and other Caribbean Islands, **13**: 55, pl. 11, figs. B-C.

Records. Great Hill near Paris (F. Haas).

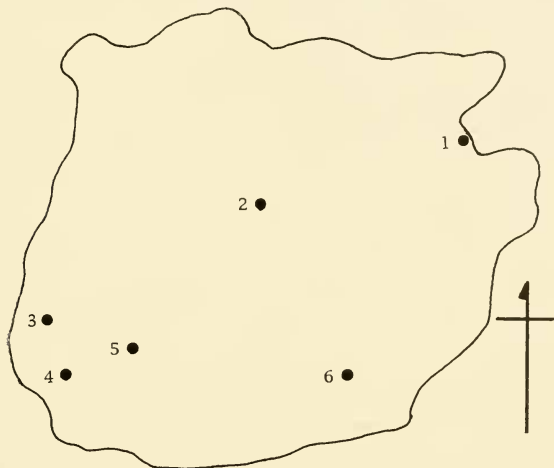


Plate 16

Saba Island, Lesser Antilles

- | | |
|-------------------------------|------------------------------|
| 1. Spring Bay | 4. Great Hill and Paris Hill |
| 2. The Mountain (Mt. Scenery) | 5. The Bottom |
| 3. Castle Hill (Kates Hill?) | 6. Booby Hill |

Subulina octona (Bruguière)

Bulimus octonus Bruguière 1789, Encyclopédie Méthodique, **1**: 325 (Guadeloupe, Lesser Antilles).

Subulina octona (Brug.). Pilsbry 1906, Man. of Conch. (2) **18**: 72, pl. 12, figs. 8-9; *ibid.* p. 222, pl. 39, figs. 28-37, 39-40. (Numerous localities given in both parts).

Subulina octona (Brug.). Haas 1962, Studies on the Fauna of Curaçao and other Caribbean Islands, **13**: 51, pl. 8, figs. A-F.

Records. Road to Bottom; Kates Hill; Booby Hill; Great Hill (all F. Haas).

Specimens examined. The mountain at 2000 feet; Booby Hill at 1500 feet (both G. Seaman).

Remarks. It is generally held that this species had its origin in the American tropics. It appears to be a species well adapted to transport by mechanical means, mainly by commerce and is now well distributed throughout much of the tropics of both hemispheres.

OLEACINIDAE

Melaniella gracillima sanctithomensis (*Pilsbry*)

Varicella gracillima sanctithomensis Pilsbry 1907, Man. of Conch. (2) **19**: 57, pl. 14, fig. 32 (Hill opposite Bakers, St. Thomas, Virgin Islands).

Pichardiella gracillima sanctithomensis (Pils.). Haas 1962, Studies on the Fauna of Curaçao and other Caribbean Islands, **13**: 59, pl. 11.

Records. Road to Bottom (F. Haas).

Remarks. The first and only record of this species from Saba is that by Haas 1962, p. 59.

SAGDIDAE

Lacteoluna selenina (*Gould*)

Helix vortex Pfeiffer 1839, Archiv für Naturgeschichte (Wiegmann) **5**: 351 (Cuba [Canasi, Matanzas]), non Linnaeus 1758.

Helix selenina Gould 1848, Proc. Boston Soc. Nat. Hist., **3**: 38 (Georgia and Florida).

Lacteoluna selenina Gould. Pilsbry 1940, Acad. Nat. Sci. Philadelphia, Mono. no. 3, **1**: 981; fig. 569.

Specimens examined. The Mountain at 2000 feet (G. Seaman).

Remarks. A species of wide distribution in the West Indies extending from Bermuda, the Bahamas, Greater Antilles and the Lesser Antilles to Barbados. It is also known from southern Florida.

ZONITIDAE

Zonitoides arboreus (*Say*)

Helix arboreus Say 1817, Nicholson's British Encyclopedia (American edition) **2**: art. Conchology, second species, pl. 4 (no locality given).*

*The date for this species is frequently given as 1816 in error. This date was given incorrectly by W.G. Binney in his Bibliography of North American Conchology 1863, pt. 1, p. 254 but in 1864, pt. 2, p. 277 he gave the corrected date.

Zonites bryodes Shuttleworth 1854, Diagnosen neuer Mollusken, no. 6. [*in*] Mitt. Naturf. Gesell. in Bern, p. 128 of reprint (near San Juan and Luquillo, Porto Rico [sic]).

Zonitoides arboreus (Say). Pilsbry 1946, Acad. Nat. Sci. Philadelphia. Mono. no. 3, 2: 480, figs. 261-262; van der Schalie 1948, Misc. Publications, Museum of Zoology, Univ. of Michigan, no. 70, p. 49, pl. 3, figs. 12a-b.

Specimens examined. The Mountain at 2000 feet (G. Seaman).

Remarks. A widely distributed species in North America, extending north into northern Canada and south into Central America as far as Costa Rica. It has been introduced into Europe, South Africa and Australia. In the West Indies it has been introduced into Cuba, Hispaniola, Jamaica, Puerto Rico, and in the Lesser Antilles, from Guadeloupe and Dominica. This is the first record for Saba.

As Say gave no type-locality, we here select Philadelphia, Pennsylvania, Say's original home and where he did most of his early collecting.

BULIMULIDAE

Bulimulus (Bulimulus) guadalupensis *Bruguière*

Helix exilis Gmelin 1791, Systema Naturae, ed. 13, 1: pt. 6, p. 3668 (locality unknown); non Gmelin 1791, p. 3616; nec *Helix exilis* O. F. Muller 1774

Bulimus guadalupensis Bruguière 1789, Encyclopédie Méthodique, 1: 313 (Guadeloupe [Lesser Antilles]).

Bulimulus exilis (Gmelin). Pilsbry 1897, Man. of Conch. (2) 11: 37, pl. 9, figs. 61-67 (numerous localities).

Specimens examined. The Mountain at 2000 feet; Booby Hill at 1500 feet (G. Seaman); Saba (MCZ).

Remarks. So far as I can determine this is the first published record of this species from Saba Island.

Bulimulus (Bulimulus) diaphanus (*Pfeiffer*)

Bulimus diaphanus Pfeiffer 1854 [1855], Proc. Zool. Soc. London, p. 125 (St. Thomas, West Indies).

Bulimulus diaphanus (Pfeiffer). Pilsbry 1897, Man. of Conch. (2) 11: 47, pl. 9, fig. 44 (Saba Id.; Arecibo, Puerto Rico; St. Eustatius and Barbados).

Records. Saba (H. A. Pilsbry).

Specimens examined. Saba (MCZ).

AMPHIBULIMIDAE

***Amphibulima patula* (Bruguère)**

Bulimus patulus Brug. 1789, Encyclopédie Méthodique, **1**: 305 (Guadelupe).
Amphibulima patula (Brug.). Pilsbry 1899, Man. of Conch. (2) **12**: 234, pl. 61, figs. 14-19.

Records. Saba (H. A. Pilsbry 1899).

Specimens examined. The Mountain at 2000 feet (G. Seaman).

Remarks. This small family is closely related to members of the Bulimulidae. The few species are limited to the northern islands in the Lesser Antilles. *Amphibulima* is related distantly to the genus *Gaeotis* of Puerto Rico.

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